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| **UNIT**: Chemical Systems and Equilibrium **TITLE OF LESSON** : Acid-Base Review | | | |
| **BIG IDEA**:  Chemical systems are dynamic and respond to changing conditions in predictable ways.  Applications of chemical systems at equilibrium have significant implications for nature and industry. | | **MATERIALS**:  - Three different coloured pens  - One “Acid-Base Review” sheet  - Materials for titration demo for Minds On | |
| **MINISTRY EXPECTATION**:  E2.5 Solve problems related to acid-base equilibrium, using acid-base titration data and the pH at the equivalence point  E3.6 Explain the Bronsted-Lowry theory of acids and bases  E3.7 Compare the properties of strong/weak acids and bases using the concept of dynamic equilibrium | |
| **STUDENT LEARNING GOALS**:   * To give students a review of important concepts taught in the acids and bases unit of Grade 11, prior to learning the new upcoming concepts in the Grade 12 curriculum. | | **APPENDICES**  **Appendix A1)** “Acid-Base Review” Sheet | |
| **PRIOR KNOWLEDGE:**   * Theories of acids and bases * What are strong/weak acids and bases? Examples? * Concept of dynamic equilibrium and pH, pOH [H30+], [OH-] * Neutralization reactions and calculations * Solving pH, pOH problems * Indicators-different types and when to use specific ones * Titration curves (Strong vs. Strong, Weak vs. Strong) | |
|  | T/L STRATEGIES | RATIONALE | ASSESSMENT |
| **A MINDS ON**  15 min. | 1. **Acid-Base Demo (Titration)**   A ‘hook’ into the acids and bases content of the Grade 12 equilibrium unit. As the teacher is doing the demo, they are asking questions to the class to review key concepts covered in Grade 11 concerning acids and bases. | To prepare students to learn acids and bases in the equilibrium unit of Grade 12. The demo serves as a refresher of acid-base concepts covered in Grade 11. | **Assessment For Learning**  Drawing on prior knowledge of the students |
| **B**  **ACTION**  2 min. | 1. Allow students to divide themselves into groups of 3. |  |  |
| 35 min | **2) Review Activity**  - Students will follow the instructions for the review activity and work together as a group to complete all questions. The questions cover the acids and bases unit of the Grade 11 curriculum.  **Appendix A1)** “Acid-Base Review” Sheet | Gives students the opportunity to remember key concepts learned in Grade 11 and prepares them for new upcoming material related to acids and bases. | **Assessment For learning and As Learning**  Allowing students to recall what they learned from Grade 11 chemistry. As well, after students have completed the review sheet, they will review the answers together as a group for verification. |
| C CONSOLID-ATION &  CONNEC-TION   1. min. | 1. **Class Review**   -Answers will be taken up as a class to ensure all students answered correctly. | This activity will give students the opportunity to assess how well they know their material and to ask questions if clarification is needed. | **Assessment For/As Learning**  This activity will allow students to consolidate their understanding of acids and bases. It will also allow the teacher to verify what the students know and whether or not a more thorough review is needed before presenting new concepts. |
| NEXT STEPS | 1) For homework, have students complete homework questions. | | |